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# Introducing the Strategy Lifecycle: Using Ontology and Semiotics to Interlink Strategy Design to Strategy Execution

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**Abstract.** The ability of existing strategy concepts to analyse strategy, design strategy and execute strategy within organisations has an alarmingly poor historical track record. Based on the long-standing semiotics and ontology research work of the Global University Alliance (GUA) and its members, a *Strategy Lifecycle* is introduced. The *Strategy Lifecycle*, underpinned by ontology and semiotics incorporates all the constructs that can be found in the most popular strategy concepts and frameworks. It explains the value of the underlying strategy ontology and the relationship between the strategy meta model, the *Strategy Lifecycle* and various artefacts used around strategy work. The paper concludes with future scope and application that lies ahead for the *Strategy Lifecycle*.

## **Keywords:**

Strategy Lifecycle, Strategy Artefacts, Strategy Meta Model, Strategy Semiotics, Strategy Ontology, Strategy Architecture

## **1 Introduction**

The challenge of taking your strategy design through to execution has been well documented [2, 3, 4, 7, 12]. In fact, there has been an overwhelming rate of failure reported within the last two decades [2, 3]. Scholars of strategy have been critical of strategy implementation and its success rate [29]. Bridges, an organisation that has been surveying strategy implementations since 2002 reported in their 2016 survey a failure rate of 67% [2]. Their recent survey revealed that the main three reasons for implementation failure are: *poor communication*, *lack of leadership* and *using the wrong measures*. Only *one in five organisations review their implementation on a monthly basis* [2]. Lessons learned from some of the epic failures highlight (in Kodak's case) the *inability to map strategy against the market forces* [8]. Another significant learning curve highlights the *failure in organisations' abilities to architect their strategy into daily operations that are monitored in accordance to meeting the strategy objectives* [14].

This paper positions itself around addressing these challenges and more through introducing the *Strategy Lifecycle*. This consists of six distinct stages: Analyse and Understand, Strategy Options & Design, Strategy Development, Strategy Execution, Strategy Governance and Continuous Strategy Improvement. We start with providing a summary in the traditional ways of strategy thinking indicating where the gaps are and alluding to areas where the *Strategy Lifecycle* addresses these gaps. This is followed by introducing the *Strategy Lifecycle*, its purpose, relevance to strategy and its compatibility with enterprise strategy regardless of industry. The strategy way of working follows with examples of how each stage can be applied to an enterprise. The extent of the model is then presented with its embedded ontology and semiotics followed by the conclusion which summarises the validity and highlights the future work surrounding this area.

## 2 Strategy and Traditional Ways of Thinking

The notion of strategy by its most simple definition; “A plan of action designed to achieve a long-term or overall aim” [9] goes thousands of years beyond business strategic management science that has existed since the 1960’s [6]. However, it is from the work of academia and industry practice since the 1960’s where we can examine how strategy has developed within the context of organisation. Decades leading up to the year 2000 have witnessed significant developments in organisation strategy. Godfrey describes these shifts as; “interests, priorities and concerns in response to the wider social, political and economic concerns of the day” [6]. A collection of influential publications in the 60’s established the foundation of strategic management. Two academics and one practitioner paved the way for further development within the strategic management discipline. Chandler’s *Strategy and Structure* [5], Slone’s *My Years with General Motors* [11], and Ansoff’s *Corporate Strategy* [1] are regarded as the break through literature in this field [6, 10]. It is from their works that a more structural approach towards strategy was formed. Concepts such as separating implementation from formulation, return on investment and policy from tactics were some of the formalised schools of thought [13]. Three stages within the *Strategy Lifecycle* (Develop, Execute, and Govern) build upon these thoughts and in the later chapters we discuss the significance of these stages.

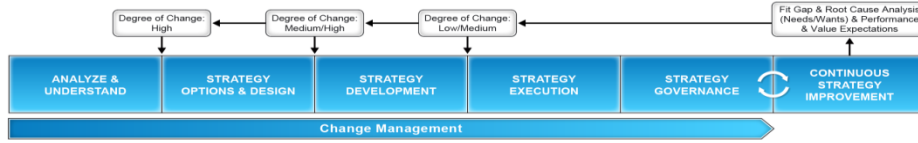
The 70’s witnessed the rise of the consulting firms imprinting their influence on the development of strategy. GE-McKinsey matrix and the Boston Consulting Group Matrix focussed on diversification and growth strategies (Design stage in the lifecycle) [10]. Academia continued to further develop the science behind strategy which by the end of 1970’s, strategy management was firmly established as a discipline [6]. The 1980’s witnessed the intervention of Michael Porter’s strategy paradigm. Renown for the Five Forces [15] (Analyse & Understand stage in the *Strategy Lifecycle*), Value Chain [16] (Execution stage in the *Strategy Lifecycle*) and Generic Strategies [17] (Design stage within the lifecycle) his works is still part of academic and industry practice today [18, 19]. Resource Based View (RBV) made its imprint in the 90’s, adopting a more focussed lens on internal resources, capabilities and competencies.

Innovation and value dominated strategic thought from 1990 onwards [6, 10]. Each model and theory had its industrial demands, social and economic setting during its time [6]. In spite of this, many of these developments still have use and relevance today. However this does not discard the fact that there is somewhat a disjointed landscape when we try to holistically understand the theory and models that represent strategic management today.

Whilst this is a very brief summary of the development in strategy concepts, it is important to understand the gaps in the existing theoretical strategy landscape. For example Porter's Five Forces does not integrate with strategy options and strategy design, the BCG Matrix does not integrate with strategy execution. The Value Chain which has the highest level of organisational view, does not integrate with the developed strategies or even strategy governance. Newer concepts such as the strategy map, are neglecting the needed links to internal or external forces and trends, the organisational competencies, roles involved in terms of owners, as well as an absent relationship to mission and vision. The gap between the relationship of strategy and its context i.e. forces, mission, vision, organisational components, owners, etc. in existing theory is what separates the ability to work with strategy in the course of its lifecycle. In the later chapters we will delineate gaps filled by the *Strategy Lifecycle* and through doing so establish its position.

### 3 A Strategy Lifecycle Way of Thinking

We have just elaborated on the various gaps in the existing theoretical strategy landscape and how there is a need to work with strategy in the course of its lifecycle. What we need is to manage the entire *Strategy Lifecycle*, from strategy understanding and analysis, strategy options and design, strategy development to strategy execution as well as strategy governance and continuous strategy improvement. A lifecycle approach is needed, as it is an instrument to represent the course of developmental changes through which the strategy evolves during its lifetime. Both in terms of evolution but also changes as it passes through different phases during its lifetime existence. As illustrated in figure 1, from strategy understanding and analysis, strategy options and design, strategy development, strategy execution as well as strategy governance and continuous strategy improvement, the lifecycle helps guide the strategy practitioners to work with the strategy during its development phases and lifespan. It enables the mapping of relevant components such as forces and trends, risk, organisational competencies, owners as well as the specification of activities needed for strategy execution and governance. What is also worth commenting is the necessity of continuous strategy improvement that facilitates the feedback loop in a systematic approach, where depending on the degree of change it can help an organisation optimise its underlying strategy and activities to achieve more efficient results

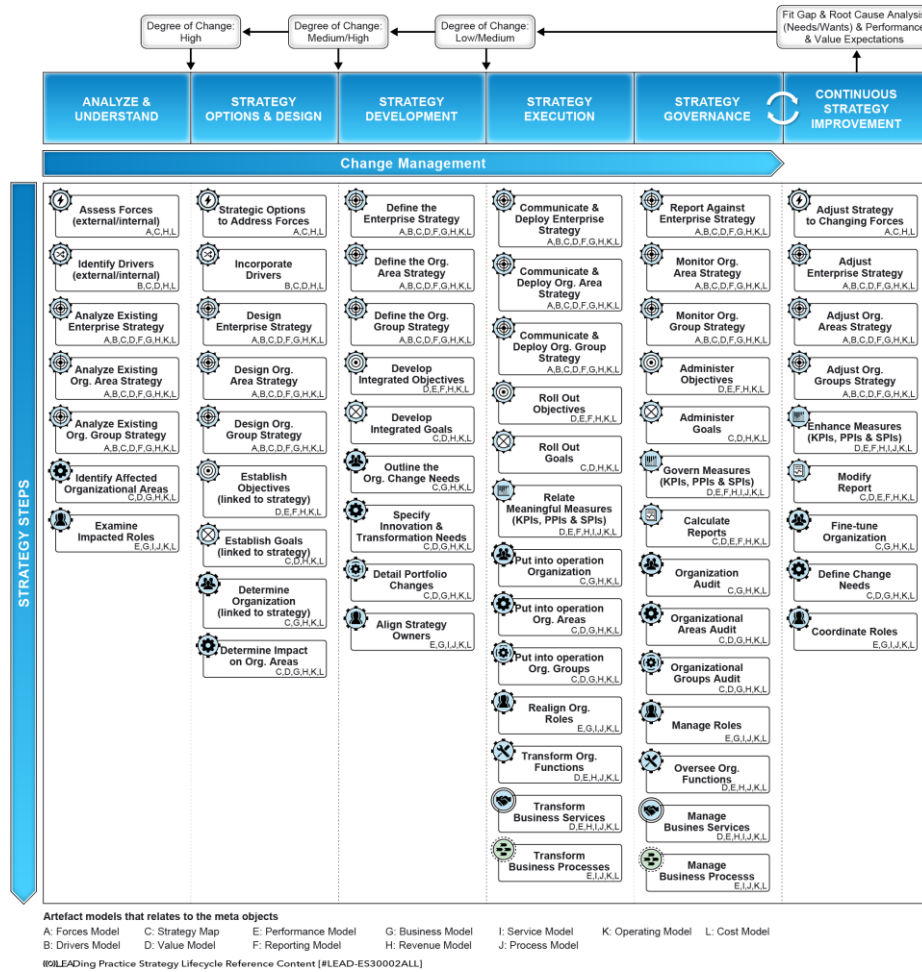


**Fig. 1 Six Phases within the Strategy Lifecycle**

The *Strategy Lifecycle* thereby consists of a set of phases in which each phase is inter-linked with the previous one. It provides a highly useful sequence of phases and steps that any strategy practitioner, executive, business analyst or even business architect can follow, regardless of industry and size of organisation. The proposed *Strategy Lifecycle* concepts are as discussed interlinked between each other, but it also can be combined with any kind of other lifecycle thinking, such as the product lifecycle, value lifecycle, service lifecycle, process lifecycle, application lifecycle or an enterprise architecture lifecycle [27]. The previously mentioned possibility to integrate lifecycle thinking, helps various practitioners place focus on all relevant strategy aspects from business, information and technology aspects. Which on the one hand is a part of strategy execution, but can also help with the *Strategy Lifecycle* phases of strategy analysis, strategy design input as well strategy development.

#### 4 Strategy Way of Working

When a practitioner or organisation decides to use the *Strategy Lifecycle* to lay the foundation of what we call 'the strategy way of working'; all employees across all organisational boundaries of the enterprise, now have a conjoint way of working with strategy in the course of its lifecycle. This means that a common understanding and consensus has been reached within the organisation, which immediately increases the level of strategy maturity. In Figure 2 is an illustration of the most common steps in the *Strategy Lifecycle* phases. You will notice that the steps are not linear and inter-linked, this is due to the fact that this is not a waterfall approach. This should be viewed as an agile on demand concept, that depending on your specific situation, different components and thereby steps matter. Therefore, all these different steps should be seen as building blocks of the *Strategy Lifecycle*. Due to space limitation of this paper, we will only illustrate the most relevant building blocks involved.



**Fig. 2. The Strategy Lifecycle Building Blocks and Relevant Artefacts**

Typical artefacts that are used in these phases are specified in figure 2 as letters e.g. A: Forces Model. Obviously other artefacts could be used in the various phases, such as a Vision & Mission Map, Stakeholder Map, Change Model, Innovation & Transformation Canvas. However some organisations will not develop any artefacts for the defined steps but rather, work through them in a workshop fashion. Therefore we have included the most common examples.

## 5 The Value of an Underlying Strategy Ontology

An ontology is an intentional semantic structure that encodes the set of objects and terms that are presumed to exist in some area of interest (i.e. the universe of discourse

or semantic domain). Furthermore this includes the relationships that hold among them and the implicit rules constraining the structure of this (piece of) reality [21, 22]. In this definition, intentional refers to a structure describing various possible states of affairs, as opposed to extensional, which would refer to a structure describing a particular state of affairs. The word semantic indicates that the structure has meaning, which is defined as the relationship between (a structure of) symbols and a mental model of the intentional structure in the mind of the observer. In the context of the strategy ontology, we have used semantics which are an aspect of semiotics, like syntax, to distinguish valid from invalid symbol structures, and like pragmatics, it relates symbols to their meaning within a context e.g., the community in which they are shared [20]. Ontologies can be categorised and classified according to several criteria (e.g., context, semantic relations) [25]. When ontologies are classified according to their universe of discourse, we distinguish foundational, domain, task and application ontologies [23]. The strategy ontology would be considered to be an application ontology, as it relates to a very specific universe of discourse. Figure 3 displays the *GUA Ontology Meta Model* in which the strategy meta model is derived.

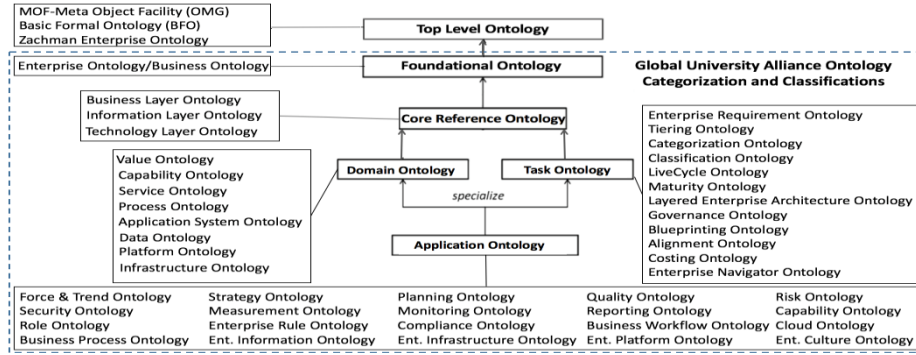


Fig. 3. GUA Ontology Meta Model

The strategy vocabulary is built based on the existing applications/uses and as specialisations of the enterprise ontology terms [24]. As illustrated in figure 4, the strategy ontology provides an overview of the most common strategy related meta-objects, but it also provides the relationships between the objects and how they are used across the *Strategy Lifecycle* phases and within various strategy relevant artefacts. The Strategy Ontology MetaModel has the purpose of portraying the strategy relevant meta objects and the relationship between the objects. Furthermore, it documents the semantic relations as well as describing which artefact has that specific object. Unlike other strategy meta models the Strategy Ontology MetaModel aims to encapsulate all the relevant aspects that semantically related to strategy. Constantinou's et al. [28] development of '*A meta-model of strategy maps and balanced scorecard*' intentionally focuses on Kaplan and Norton's work on strategy maps and the balance scorecard. Although these are two well utilised approaches in strategy they do not, nor does the meta model enable a practitioner to navigate their way through design to execution. Building integrated and standardised strategy relevant

artefacts which are relevant for strategy practitioners does require an underlying fully integrated meta model with semantic richness that enables interoperability between the artefacts and the lifecycle phases. Meta models that incorporate multiple artefacts/views use the semantic relations and their rules associated with the meta objects connectivity. For example, the link between the meta-object ‘force’ and the meta-object ‘strategy’ enables the practitioners to understand the forces that impact the organisation and which forces that need to be addressed by the strategy. There are also objects that have multiple semantic relations. For example the measure meta-objects intersect with objectives, organisational functions, roles, process, functions and reports. Each one of the other meta objects has multiple artefacts to model that subject. As it has the same object, consequently, the content of one artefact can through the same object also be reused in a different artefact [14]. During the different phases of the *Strategy Lifecycle* various objects i.e. subjects and thereby artefacts are used. Appreciating the full semiotic depth of the strategy ontology is therefore considered an essential part for any practitioners work with and around various relevant strategy concepts [26]. As illustrated in figure 4, the *Strategy Lifecycle* is therefore built upon ontological and semiotic concepts, which have been studied and observed to apply to almost any strategy modelling, engineering and architecture concept. The *Strategy Lifecycle* approach is therefore expected to provide a powerful tool to assist in the identification and capture of relevant strategy aspects.

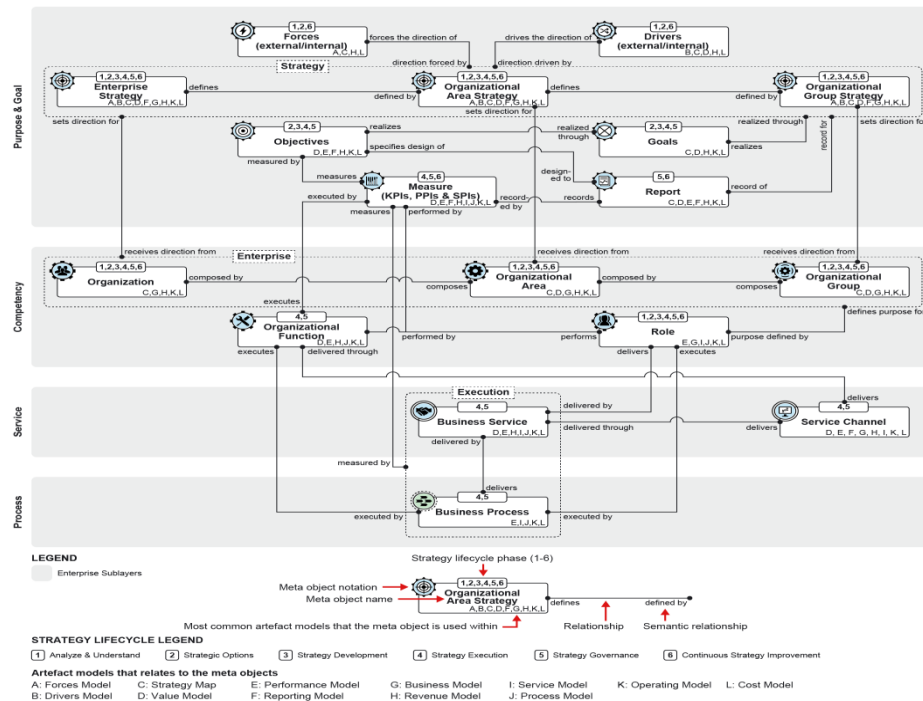


Fig. 4. Strategy Ontology Meta Model



## 6 Conclusion

The *Strategy Lifecycle* provides a truly interlinked approach from strategy design to strategy execution. The underlying ontology and semiotics allows us to take any organisational strategy and integrate it into the way of thinking, working and modelling regardless of industry type. The *Strategy Lifecycle* is based upon an empiric ontology, meaning that its roots lie in both practice and research. Consequently, it covers all aspects of the strategy phases. Some of the gaps discussed in the strategic theory and models can therefore be fulfilled with the *Strategy Lifecycle* approach. It is designed to be vendor neutral/agnostic and it can therefore be used with most existing frameworks, methods and (or) approaches that have any of the mentioned relevant strategy meta-objects. Due to the limitations placed on this paper we were only able to demonstrate a brief overview of its usefulness.

While it can be used as described, in order to attain the desired level of completeness, it is complemented with elicitation support such as guiding principles for creating, interpreting, analysing and using strategy engineering, modeling or architecture concepts within the *Strategy Lifecycle*. In future publications this will be extended to evidence deeper in-sights into aspects such as enterprise ontology and semantics, strategy architecture, business architecture and multiple modelling disciplines including value modelling, revenue modelling, performance modeling and service modeling.

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